



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,247	01/22/2004	Hasan Nejad	M4065.0513/P513-A	2010
24998	7590	06/20/2005	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			PRENTY, MARK V	
2101 L Street, NW			ART UNIT	PAPER NUMBER
Washington, DC 20037			2822	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b> 10/761,247	<b>Applicant(s)</b> NEJAD ET AL.	
	<b>Examiner</b> MARK V. PRENTY	<b>Art Unit</b> 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 41-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>January 22, 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

This Office Action is in response to the papers filed on January 22, 2004.

The specification's reference to parent application 10/146,890 (see the preliminary amendment filed on January 22, 2004) must be amended to include that application's current status as United States Patent 6,716,644.

Claims 41-51 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent 6,709,874 (Ning).

With respect to independent claim 1, Ning discloses a magnetic random access memory structure (see the entire patent, including the Fig. 4 disclosure) comprising: a longitudinally extending planarized conductive line 218/220 formed within an insulating layer 212; an electroplated bottom sense layer (i.e., magnetic stack 222's bottom metal stack, which can be formed by electroplating – see column 6, lines 59-62 together with column 6, lines 35-38) over said conductive line; a nonmagnetic tunnel barrier layer (i.e., magnetic stack 222's thin dielectric layer) over said sense layer; a pinned layer (i.e., magnetic stack 222's top metal stack) over said nonmagnetic layer; and at least one electrical conductor 226/228/230 in contact with said pinned layer.

Claim 41 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to dependent claim 42, Ning's sense layer is formed of NiFe (see column 6, lines 54-58).

Claim 42 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to dependent claim 43, Ning's insulating layer 212 is selected from the group consisting of BPSG, SiO, SiO<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub> and polyimide (see column 6, lines 1-7).

Claim 43 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

Art Unit: 2822

With respect to dependent claim 44, Ning's nonmagnetic layer is aluminum oxide (see column 7, lines 1-3).

Claim 44 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to dependent claim 45, Ning's sense layer is formed of [a] plurality of layers to produce a ferromagnetic sense layer (see column 6, lines 54-59).

Claim 45 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to dependent claim 46, Ning's pinned layer is formed of a plurality of layers to produce a ferromagnetic pinned layer (see column 7, lines 4-6).

Claim 46 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to independent claim 47, Ning discloses a processor-based system (see the entire patent, including the Fig. 4 disclosure), comprising: a processor (note column 1, lines 46-51); and an integrated circuit coupled to said processor, said integrated circuit including a plurality of magnetic random access memory cells, each of said magnetic random access memory cells including an electroplated bottom sense layer (i.e., magnetic stack 222's bottom metal stack, which can be formed by electroplating – see column 6, lines 59-62 together with column 6, lines 35-38) formed over a planarized conductor 218/220, a nonmagnetic layer (i.e., magnetic stack 222's dielectric layer) formed over said sense layer and a pinned layer (i.e., magnetic stack 222's top metal stack) formed over said nonmagnetic layer.

Claim 47 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to dependent claim 48, Ning's sense layer is formed of NiFe (see column 6, lines 54-58).

Art Unit: 2822

Claim 48 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to dependent claim 49, Ning's nonmagnetic layer is aluminum oxide (see column 7, lines 1-3).

Claim 49 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to dependent claim 50, Ning's sense layer is formed of [a] plurality of layers to produce a ferromagnetic sense layer (see column 6, lines 54-59).

Claim 50 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

With respect to dependent claim 51, Ning's pinned layer is formed of a plurality of layers to produce a ferromagnetic pinned layer (see column 7, lines 4-6).

Claim 51 is thus rejected under 35 U.S.C. 102(e) as being anticipated by Ning.

United States Patent 6,716,644 (Nejad et al.) and United States Patent 6,743,641 (Yates et al.) are relevant to this application.

Registered practitioners can telephone the examiner at (571) 272-1843. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (571) 272-2800.

  
Mark V. Prenty  
Primary Examiner